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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/727,699

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Avetik Harutyunyan

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EXAMINER

JOHNSON, EDWARD M

ART UNIT

PAPER NUMBER

1754

MAIL DATE

DELIVERY MODE

07/16/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/727,699

Applicant(s)

HARUTYUNYAN, AVETIK

Examiner

Edward M. Johnson

Art Unit

1754

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 May 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-50 is/are pending in the application.
- 4a) Of the above claim(s) 20-37 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 and 38-50 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group I in the reply filed on 5/3/07 is acknowledged.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-3, 5-18, 38-39, and 41-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tennent US 4,663,230.

Regarding claims 1 and 38, Tennent '230 discloses a method for making nano-sized carbon fibers comprising providing a catalyst nanoparticle (abstract) and exposing to carbon containing gas to form fibers (abstract). Tennent further discloses alumina support (column 3, lines 52-55).

Tennent '230 fails to disclose entraining in inert gas.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to entrain in inert gas

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because Tennent discloses the contacting may be carried out in the presence of hydrogen (column 4, lines 4-5).

Regarding claims 2-3 and 39, Tennent discloses iron.

Regarding claim 5, Tennent discloses 3.5 nm (column 3, lines 49-51).

Regarding claims 6-8 and 41, Tennent discloses alumina support (column 3, lines 52-55).

Regarding claims 9 and 42, Tennent discloses 0.5 and 15 microns (Example 1), which at least suggest an optimum size including 0.5-5 microns, achieved through routine experimentation.

Regarding claim 10, Tennent discloses hydrogen (column 4, lines 4-5).

Regarding claims 11, 14-16, 43-44, and 47-48, Tennent discloses argon (Examples 5 and 7).

Regarding claims 12-13 and 45-46, Tennent discloses methane (column 5, lines 18-30).

Regarding claims 17-18 and 49, Tennent discloses 900 degrees C (Example 10).

4. Claims 4, 40, and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tennent '230 as applied to claims 2 and 38 above, and further in view of Moy et al. US 6,221,330.

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Regarding claims 4 and 40, Tennent fails to disclose molybdenum.

Moy '330 discloses molybdenum (column 3, lines 56-62).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the molybdenum of Moy in the process for making nano-sized carbon fibers of Tennent because Moy discloses the molybdenum as a preferred catalyst (summary) in a process for making carbon nanotubes using metal catalysts (abstract).

Regarding claim 50, Moy discloses single wall nanotubes (abstract).

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edward M. Johnson whose telephone number is 571-272-1352. The examiner can normally be reached on M-F 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley S. Silverman can be reached on 571-272-1358. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Edward M. Johnson
Primary Examiner
Art Unit 1754

EMJ